PTYCTODONT JAW FROM THE BROKEN RIVER PROVINCE, NEQ. *Memoirs of the Queensland Museum. 42(1): 80. 1997:-* A single ptyctodont gnathal recovered from the Papilio Mudstone (Middle Devonian, Givetian), Broken River Province, north Queensland, represents the first macrofossil evidence for the family in the Middle Devonian of Australia whilst both Early and Late Devonian ptyctodontds are known (Long, 1991). Possible ptyctodontid microfossils have been described from Emsian and Givetian units in the Broken River Province by De Pomeroy (1994). The new specimen is a gnathal with a well preserved tritoral surface. The specimen was recovered from QML1018, SW of Storm Dam, Wando Vale, where outcrops of the Papilio Mudstone form part of an extensive muddy carbonate platform succession whose sedimentology has been detailed by Lang et al. (1993). Jell at al. (1993) place the Papilio Mudstone at Storm Dam within the *varcus* to *hermanni-cristatus* Conodont Zone.

Systematic Palaeontology

Order PTYCTODONTIDA Gross 1932

Family PTYCTODONTIDAE Woodward 1891

Ptyctodus Pander 1858

?**Ptyctodus** sp.

(Fig. 1)

1996 ?ptyctodontid indet., De Pomeroy: 431, fig. 6b, ?O,P

Material. QMF35438, from QML1018, SW Storm Dam, Broken River Province, NQ. Papilio Mudstone, Middle Devonian, Givetian. Collected A.Cook & N. Camilleri.

Description. Right? superognathal 44mm long; functional edges steep and narrow with a short anterior cutting edge. External surface relatively smooth with faint curving lineation. Large depression on the internal surface. Gnathal widens posteriorly to double width at about two-thirds along its length (from 4mm to 8mm across); dental plate with smoothly concave, sharp biting edge. Tritor 3mm wide, 17mm long with approximately 5 tritoral dentine plates per millimetre.

Remarks. Ptyctodonts were predominantly marine bottom feeders with a small gape, bordered with a series of few strong beak-like dental plates (Denison, 1978). Ptyctodontid gnathalia do not consist of bone but are pure dentine. Well worn dental surfaces of this specimen appear to be preserved as vivianite. Ptyctodont toothplates are commonly found as isolated elements in the Middle and early Upper Devonian of North America and Europe. In the last century many were given specific names but cladistic analysis of the late twentieth century has revised and suppressed many of these taxa. Detailed study of such toothplates may prove them to be useful biostratigraphic tools.

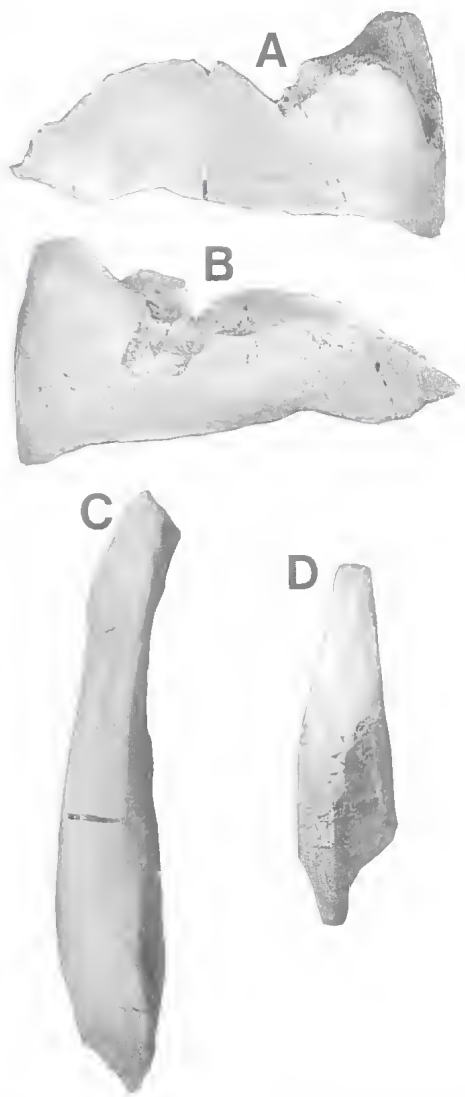

FIG. 1. ?*Ptyctodus* sp., x 1.2. A, external (labial) view. B, internal (lingual) view. C, occlusal view. D, anterior view.

Acknowledgments

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Susan Turner & Alex G. Cook, Queensland Museum PO Box 3300 South Brisbane QLD 4101 Australia; 20 December 1996.